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Ethnic intermarriage among immigrants in the Netherlands: An analysis of population data [☆]

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Abstract

This study uses data on the entire population of the Netherlands to analyze ethnic endogamy among first generation immigrants. First, it replicates patterns observed in earlier studies. Endogamy is higher in immigrant groups that are large, have a favorable sex ratio and that are more segregated spatially. At the individual level endogamy is higher among immigrants who do not speak the host language well, who have lower educational qualifications, and who are nonwhite. Second, it extends earlier theoretical work and shows the importance of immigrants' religious affiliation and the religious diversity of an immigrant group. Third, it examines the severity of some methodological problems of earlier studies on ethnic endogamy.

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1. Introduction

Numerous authors have argued that ethnic intermarriage is a core measure of social integration (Gordon, 1964; Hwang et al., 1997; Lieberman and Waters, 1988). It is

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maintained that marriages between members of different groups indicate frequent social interaction and strong social acceptance between these groups (Kalmijn, 1998). Furthermore, research has shown that immigrants who marry outside their own group have a better economic position (Meng and Gregory, 2005), and that children of mixed marriages identify themselves less with a single group, and have less negative attitudes towards other groups (Kalmijn, 1998).

On a theoretical level, researchers agree that ethnic endogamy is an outcome of individual and contextual factors (Hwang et al., 1997; Kalmijn, 1998; Sherkat, 2004). At the individual level, it has been found that the likelihood of ethnic exogamy increases with immigrant generation (Lieberson and Waters, 1988; Lievens, 1998; Pagnini and Morgan, 1990; Qian, 1999; Qian et al., 2001; Stevens and Swicegood, 1987) and proficiency in the host language (Hwang et al., 1997; Tzeng, 2000). Systematic differences also have been reported with respect to age, sex, and other individual characteristics (Hwang et al., 1997; Stevens and Swicegood, 1987; Kulzycki and Lobo, 2002). Contextual characteristics are important for intermarriage as well. The size of an ethnic group, for instance, increases levels of endogamy (Hwang et al., 1997; Lieberson and Waters, 1988; Lievens, 1998). In addition, endogamy is higher among groups that are more segregated geographically (Hwang et al., 1997; Lieberson and Waters, 1988) and that have a more favorable sex ratio (Hwang et al., 1997; Pagnini and Morgan, 1990).

In this paper, we focus on ethnic intermarriage among first generation immigrants, that is the foreign born population. We try to contribute to the existing literature on ethnic endogamy in three ways. First, we assess the generalizability of well-known individual and contextual effects documented in earlier research, by looking at intermarriage in an unexplored receiving context: the Netherlands. The majority of studies on intermarriage has been done in the United States (e.g., Lieberson and Waters, 1988; Pagnini and Morgan, 1990; Qian, 1999; Rosenfeld, 2002) and in other classical immigration countries like Australia (e.g., Jones and Luijckx, 1996; Meng and Gregory, 2005) and Canada (e.g., Kalbach, 2002; Tzeng, 2000). From a theoretical and empirical perspective, it is important to examine whether patterns observed earlier in traditional immigrant countries equally apply to the Dutch context. For instance, it could be that the black/white distinction, which plays a pivotal role in the U.S. context (Feliciano, 2001; Kalmijn, 1993; Lieberson and Waters, 1988; Qian and Cobas, 2004; Qian and Lichter, 2001), does not influence marriage patterns in the Netherlands to the same degree—because of supposed lower levels of racism.

Second, we extend earlier theoretical work in several directions. While several studies have focused exclusively on the influence of individual characteristics on ethnic intermarriage (Kulzycki and Lobo, 2002; Qian and Lichter, 2001), other studies have been concerned primarily with the role of “structural” or “contextual” factors (Anderson and Seanz, 1994; Klein, 2001). In this article, we follow the work of a few other researchers (Hwang et al., 1994, 1997; Lievens, 1998) who integrated individual and contextual approaches to ethnic intermarriage. Instead of focusing on either individual or contextual characteristics, we consider both approaches at the same time. In addition, we propose several new hypotheses that fit into this “multilevel” framework. Because widely used data sets to study intermarriage, such as the Census of Population of the United States, do not contain information on religion, little is known whether religion plays a role in ethnic endogamy. We hypothesize about the role of immigrants’ religion at the individual level and the religious diversity of the group at the contextual level.

Third, we try to make methodological contributions. Most survey data used to study ethnic endogamy, such as the Census of Population of the United States, do not contain information on the *date* and *place* of marriage. As a consequence, the literature on ethnic endogamy of the foreign-born population has been hampered by several analytical problems. One issue is that a substantial part of the foreign-born population married before migrating to the receiving country (Hwang and Saenz, 1990). Another problem is that including measures of local marriage contexts (e.g., group size) at the moment of survey wrongly assumes that all immigrants have been exposed to that regional context at the time of marriage. It is possible that immigrants have been exposed to another context: either they married a long time ago in the same region or they married in another region than they inhabit at the time of the survey.

In this study, we rely on a data source that includes the date of marriage and contains information on place of marriage. We take advantage of this to assess the degree and direction of bias in analyses unable to account for these issues. The data are from the 1971 Census of Population of the Netherlands, which recently has become available in digital format to the scientific community (Schreven, 2004). Obviously, a drawback of the data is that they are rather old, but it is the last census that has been conducted in the Netherlands. This drawback, though, is clearly out weighted by the advantages of the data set. The data contain information on ethnic endogamy of multiple origin groups and cover the entire immigrant population. Moreover, the data are valuable for assessing the generalizability of determinants of endogamy found in other countries, for examining the role of religion and for examining the severity of some methodological problems of earlier studies on ethnic endogamy.

2. Theory and hypotheses

2.1. *Preferences, opportunities and third parties*

To understand the role of individual and contextual factors in ethnic endogamy in the Netherlands, we use theories that have been proposed and tested in earlier work done in other nations. Ideas on the importance of individual and contextual characteristics for intermarriage are informed by more general notions on “preferences,” “opportunities,” and “third parties” (Kalmijn, 1998; Lieberman and Waters, 1988).

Intermarriages are, first of all, an outcome of people’s preference for a spouse with certain characteristics. It is assumed that an unmarried person searches for a potential spouse that is attractive in terms of socioeconomic and cultural resources. Socioeconomic resources refer to resources that produce economic well-being and status. Potential spouses that have more prestigious jobs and higher income are assumed to be attractive candidates. Cultural resources refer to such issues as values, opinions, life style, knowledge and worldview. Here, the argument is not that people search for candidates with “more” cultural resources, but rather potential spouses that are culturally similar (Kalmijn, 1998).

A second general factor that determines intermarriage is the opportunity to meet co-ethnics and members of other groups. When people interact on a day-to-day basis with members of the own group, they naturally have a higher chance to marry endogamously. Opportunities for contact are shaped by structural and demographic forces, such as the size of the group, the sex ratio, and spatial segregation (Blau and Schwartz, 1984).

The role of third parties in the marriage market is another general factor discussed in the literature. Researchers have argued that partner selection is not only a process involving two potential partners, but is also affected by “outsiders,” such as the family, the religious community, and the state. Basically, the idea on the influence of third parties consists of two different components. One line of reasoning stresses that children are socialized such that, as they are older, they identify themselves as a member of their own group. The norms that inhibit exogamy are assumed to be directly related to the homogeneity of the network in which people were raised. Another line of reasoning states that even if people do not identify with a certain group third parties exert control of their behavior by sanctions.

We use the general ideas on the role of preferences, opportunities, and third parties to develop a series of hypotheses on ethnic endogamy in the Netherlands, distinguishing individual and contextual factors. Most individual and contextual characteristics have been discussed before in the literature, but we also propose a new factor (i.e., religious diversity of the ethnic group) and a factor that has been largely omitted in previous studies (i.e., individual religion).

2.2. Contextual effects

Perhaps the contextual characteristic most frequently studied in the literature on intermarriage is group size (Anderson and Seanz, 1994; Hwang et al., 1994, 1997; Klein, 2001; Lieberman and Waters, 1988; Lievens, 1998; Stevens and Swicegood, 1987). The size of an immigrant community clearly affects people’s daily opportunities of meeting members of the own group and those of other groups (Blau, 1977). Members of numerically larger groups more often meet members of the same group, and for that reason, are more likely to marry endogamously. Also, immigrants who belong to sizable groups more strongly identify themselves with that group, and can be better controlled by third parties. As immigrant groups become larger, there are more opportunities to fund places of worship, schools, and other ethnically based organizations (Breton, 1964). Furthermore, immigrant group size is assumed to increase negative attitudes among natives towards the members of that group (Blalock, 1967). Larger groups are more culturally, economically, and politically threatening to the native population, leading to social avoidance of immigrants. As a result, preferences among natives to marry members of larger groups are lower. In view of these ideas, we predict that *the larger the size of an immigrant group, the higher the chance of endogamy among the members of that group* (Hypothesis 1).

Ethnic endogamy also depends on the sex ratio (Anderson and Seanz, 1994; Hwang et al., 1997; Pagnini and Morgan, 1990). A shortage of marriageable co-ethnics of the opposing sex naturally constitutes a structural force towards outmarriage (Blau and Schwartz, 1984). Previous studies have shown that the majority of immigrants who initially settle in the host country are young males, but there are also some ethnic groups in which female immigrants constitute the majority (Castles and Miller, 2003). Furthermore, there exists considerable regional variation with respect to sex ratios (Fossett and Kiecolt, 1991). We therefore hypothesize that *the more favorable the sex ratio, the more likely immigrants are to marry endogamously* (Hypothesis 2).

Another contextual variable that influences endogamy is residential segregation (Hwang et al., 1994, 1997; Lieberman and Waters, 1988; Stevens and Swicegood, 1987). The migration literature has extensively documented that immigrant groups cluster in certain

regions in a country, mostly in the urban areas (Portes and Rumbaut, 1996). Some groups, however, live more concentrated than other groups, and for that reason the role of segregation is important to study. A consequence of spatial segregation of an immigrant group is that it provides a barrier to day-to-day interactions with members of other groups (Blau and Schwartz, 1984). In addition, residential segregation increases the homogeneity of immigrants' networks, leading, in turn, to stronger identification with the own group and a more effective way for third parties to sanction exogamy (Kalmijn, 1998). Thus, we expect to find a *positive effect of residential segregation on ethnic endogamy* (Hypothesis 3).

Internal status diversity is another contextual force towards outmarriage (Anderson and Seanz, 1994; Hwang et al., 1997; Lievens, 1998). Although an immigrant group is similar with respect to country of origin, members of the group may differ along cultural lines. Because people prefer to interact with others that are culturally similar, cultural diversity of an immigrant group promotes exogamy (Blau and Schwartz, 1984). Furthermore, high within-group diversity decreases the influence of third parties. Members of culturally homogeneous groups are more collectivistic and adhere more strongly to norms that inhibit outmarriage than ethnic groups that are more diverse (Anderson and Seanz, 1994). We examine this idea by looking at one core aspect of culture: religion. Some ethnic groups in the Netherlands adhere to a single religion, whereas other ethnic groups are more diverse in terms of religious composition. We predict that *the likelihood of ethnic endogamy decreases with the heterogeneity of the group in terms of religion* (Hypothesis 4).

In a related way, we explore the role of the socioeconomic composition of ethnic groups. Like people prefer to marry a co-ethnic with the same religion, people also prefer to marry a co-ethnic with a high socioeconomic status (Kalmijn, 1998). Because all people equally want to marry a high-status partner, the result is socioeconomic homogamy: a tendency of people with similar economic resources to marry each other. The availability of potential spouses with the same socioeconomic position, however, differs within and between groups, depending on both the socioeconomic composition of the group and people's own socioeconomic status (Lehrer, 1998). In low-educated ethnic groups, immigrants with a high education have more difficulties finding an equally (high) educated co-ethnic spouse than low educated immigrants, leading the higher educated to search for potential partners outside the own ethnic group (Furtado, 2006). In higher-educated groups, the situation is exactly opposite. Taking these ideas together, and focusing on education as a core element of socioeconomic status, we hypothesize that *the higher the percentage within the own ethnic group that has the same education as an immigrant of that group, the more likely that immigrant is to marry endogamously* (Hypothesis 5).

2.3. Individual effects

At the individual level, we first of all consider the role of immigrants' education. For two reasons, researchers have argued that education positively influences the likelihood of ethnic intermarriage (Kalmijn, 1998; Lieberman and Waters, 1988). One line of reasoning argues that educational attainment increases the opportunities to meet members of the out-group. More educated immigrants participate in settings in which the presence of co-ethnics is generally small, such as universities and high-status occupations. Furthermore, educational attainment is generally associated with a weaker preference for persons on ascribed characteristics (such as ethnicity). Therefore, we predict that *the higher the education of immigrants, the lower their probability of endogamy* (Hypothesis 6).

Another individual-level characteristic of immigrants we examine is religion. Although the role of religion has been debated frequently in the literature on intermarriage and homogamy among the general population (Greeley, 1970; Kalmijn, 1991; Lehrer, 1998; Sherkat, 2004), it has received little attention in studies specifically of immigrants and ethnic groups (Kennedy, 1944, 1952; Lieberman and Waters, 1988). Nevertheless, the mechanisms underlying the religion-marriage link are similar for natives and immigrants. First, religion is associated with the role of third parties. Religious communities, both ethnic and native, influence, to a certain degree, the marital choices of their members. Because immigrants not affiliated to a religion naturally do not meet this control, they are more likely to outmarry. Second, people generally prefer to marry someone who is culturally similar (Kalmijn, 1998). Obviously, religion is a core element of culture, since it is associated with cultural values, beliefs and practices. A substantial part of the Dutch population feels threatened by ethnic groups having a distinct religion than their own (Konig et al., 2000; Scheepers et al., 2002). Since the Dutch society was predominantly Christian in the period we study, immigrants having a non-Christian religion are less likely to meet natives having a similar religion, and they are more negatively received by the native population than immigrants having a Christian religion. Taken together, we expect to find that *immigrants who are not affiliated to a religion are the least likely to marry endogamously, those who have a non-Christian religion the most likely to marry within their own group, and immigrants with a Christian religion falling in between* (Hypothesis 7).

The language skills of immigrants can also play a role (Hwang et al., 1997; Stevens and Swicegood, 1987; Tzeng, 2000; Kulzycki and Lobo, 2002). Some immigrants speak the language of the host country fluently, whereas others experience more language difficulties (Van Tubergen and Kalmijn, 2005). Researchers have argued that differences in language skills affect levels of endogamy (Stevens and Swicegood, 1987). One reason is that immigrants who speak the language poorly have fewer opportunities for meeting members of the out-group. Another argument is that people prefer to marry culturally similar partners, and language is a crucial part of culture. Hence, we predict that *the better immigrants speak the Dutch language the lower their chance of endogamy* (Hypothesis 8).

Racial barriers to intermarriage have been frequently studied as well. It is argued in the literature that in the predominantly white Western countries, attitudes are generally unfavorable towards interracial marriages (Kalmijn, 1993; Lieberman and Waters, 1988). Earlier studies have been predominantly U.S. centered (Kalmijn, 1993; Lieberman and Waters, 1988; Qian and Cobas, 2004; Qian and Lichter, 2001), and in the present study, we examine the role of race in the Dutch context. Although negative attitudes towards nonwhites are probably stronger in the U.S. than in other Western nations (Model and Fisher, 2002), such attitudes are prevalent also in the Netherlands (Bovenkerk et al., 1995), leading us to predict that *nonwhite immigrants show higher levels of endogamy than whites* (Hypothesis 9).

We also examine the influence of marriage year. It is generally argued that because of modernization both immigrants and natives nowadays have a weaker preference for a potential spouse on ascribed characteristics, such as ethnicity. In line with this argument, Okun (2001) found a decline in ethnic endogamy among Asians, Africans, and Europeans in Israel in the period 1957–1995. Similarly, in a study of New York City, Gilbertson et al. (1996) showed a diminishing rate of endogamy among Puerto Ricans across generations. We assume that in the Netherlands, as well as in the sending countries of immigrants, the process of modernization affected the attitudes of the population towards intermarriage.

Because immigrants in subsequent migration cohorts have been socialized in an increasingly modern environment, we predict that *over time, there will be a weaker tendency towards ethnic endogamy* (Hypothesis 10).

Finally, following earlier studies (Qian et al., 2001; Stevens and Swicegood, 1987), we examine possible differences in endogamy by gender. Women are more often responsible for the socialization of the children and it is generally assumed that for that reason third parties will more strongly prohibit outmarriage of women than of men. Also, it has been argued that in Muslim communities, and in religious groups more generally, interfaith marriages are more strongly prohibited for women than for men (Hooghiemstra, 2003). The idea is that when Muslim women marry non-Muslims, she and their children are lost to Islam (Kulzycki and Lobo, 2002). Furthermore, researchers have argued that for immigrant men high socioeconomic resources can more easily compensate for their lower ethnic group status than is the case for immigrant women (Kalmijn, 1998). Many marriages still have a traditional division of labor, which means that men's socioeconomic resources are more important for the couple than women's socioeconomic resources. These arguments lead us to hypothesize that *men are more likely to marry exogamously than immigrant women* (Hypothesis 11).

2.4. Individual controls

We include two control variables that have been studied in previous research: age at marriage and marriage order. Although these variables have not been derived from theory, they are important to study. With respect to age at marriage, for example, Kulzycki and Lobo (2002) find a negative effect on endogamy among Arabs in the United States, meaning that Arabs who marry at a higher age are more likely to have a spouse of a different ethnic origin. Hwang et al. (1997) equally report a negative effect for Asian men in the United States. Researchers have also found variations in ethnic endogamy between first and later marriages. Hwang et al. (1997), for instance, show that among Asians in the United States, those in a second or higher order marriage are more frequently married to natives than those who are married for the first time.

3. Data and methods

3.1. Data

Data come from the 1971 Dutch Census, which has become available recently to the scientific community in digital format (Schreven, 2004). The data pertain to the entire Dutch population. We selected the married immigrant population between 18 and 65 years of age and included both men and women. Immigrants are defined as those born outside the Netherlands, and therefore refer to the so-called "first generation." Unfortunately, we have no information on the country of birth of respondents' parents. Hence, we cannot exclude immigrants of whom one or two parents were born in the Netherlands. For the same reason, we cannot study marriages between immigrant generations. Excluded from our analysis are immigrants who are subsumed under country generic classifications (e.g., immigrants born in "other European countries") and those for whom it is unknown in which municipality they live, because for these groups we have no information on contextual variables.

We use municipalities as the local marriage markets. These geographical units are similar to (multiple) villages or cities, and they represent appropriate fields of interaction for prospective marital partners. All in all, we analyze the marital behavior of 273,919 immigrants from 42 countries of origin in 673 local geographical units.

3.2. Analytical strategy

Although researchers agree that longitudinal data on marital behavior of immigrants would be preferable, such data are virtually absent at the present time. It is therefore standard practice in research on ethnic intermarriage to use cross-sectional data, which is also our strategy. The potential drawbacks of these data have been discussed extensively.

The first problem is that cross-sectional data do not measure incidence of marriages, but *prevalence*, that is the stock of marriages at a particular time (Price and Zubrzycki, 1962). This can be particularly problematic in the sense that these data not only refer to immigrants married after migration, but also include immigrants who were married abroad (Hwang and Saenz, 1990), leading some researchers to exclude the first generation of immigrants from their analysis (Lieberson and Waters, 1988). In addition, prevalence data are problematic because they do not take into account marriage dissolution (Kalmijn et al., 2005), and they are unable to measure selective emigration of immigrants (Jasso and Rosenzweig, 1990).

The second problem with cross-sectional data is the difficulty to assess issues of *causality*. Although retrospective information on the time of marriage could be included, such information is generally absent in census data. Hence, characteristics at the time of the survey are used to assess their effects on intermarriage. Because individual characteristics of partners can change after marriage, the interpretation of these effects is not so obvious. In addition, the role of contextual characteristics might be wrongly assessed because people have moved to a different region after marriage or because they married a long time ago. Being unable to identify when and where immigrants married, researchers have relied on national data to examine the influence of contextual factors on intermarriage. A drawback of this solution, however, is that it ignores that marriage markets are local in scope, not national (Harris and Ono, 2005; Lichter et al., 1991).

Although the data we use have problems too, they allow us to assess how serious some problems associated with earlier studies are. The Dutch Census measured respondents' current place of living, the respondents' year of marriage and respondents' length of stay in the current place of living. This enables us to compare the analyses of (1) national and local marriage markets,¹ (2) the entire population and a subsample excluding those married outside the current place of living, and (3) older marriages with newlyweds. Note that, because the Dutch Census does not contain a question on year of migration, the data do not allow us to distinguish between people who married outside the Netherlands and those married in the Netherlands, but outside the current place of living.

¹ Although values for group size, group-specific sex ratio, segregation and religious diversity of groups in principle differ between national and local levels, we decided to measure only group size and the sex ratio at both levels. The reason for this is that in many municipalities the number of immigrants is rather small, resulting in unstable estimates.

3.3. Measurement

We study ethnic endogamy and include a series of contextual, individual, and control variables in our analysis, which we discuss in detail below.

Ethnic endogamy: The dependent variable in this study is whether or not an immigrant is formally married to a foreign-born spouse from the same country of origin. We do not consider unmarried cohabiting couples, because these were uncommon for the period we study.

Group size: We measure the size of each immigrant group by taking the natural log of their relative population size at the national and community level (i.e., municipalities). The log transformation is used to reduce the degree of skewness in population size.

Sex ratio: We constructed a variable that measures the number of group members of the opposite sex divided by the number of group members of the same sex. Again the log transformation is used to reduce skewness and the variable is measured both at the level of municipalities and the country. Note that this variable takes two values for each immigrant group in a certain community: one for the male and one for the female members. Previous research has shown that this somewhat crude measure of the availability of potential partners highly correlates with a more direct measure of the availability of other sex persons at risk of marriage (Fossett and Kiecolt, 1991).

Segregation: We measure segregation in terms of the differential distribution of groups across the country. To compute the degree of segregation, we rely on the index of dissimilarity (Duncan and Duncan, 1955), multiplied by 100 to obtain percentages. The index is computed as follows: $D = 50 \left[\sum_i | (P_{ig}/P_g) - (P_{ih}/P_h) | \right]$. P_{ig} is the size of the population of group g in municipality i , P_g is the total population size of group g , P_{ih} is the population of group h in municipality i , and P_h is the total population of group h . Group h is in all cases the native born population. In words, D represents the percentage of an immigrant group that would need to move to create a distribution of population that is similar to that of the native born population. Naturally, D ranges from 0 to 100.

Religious diversity: We computed the religious diversity of the immigrant group with the Herfindahl-index, a measure frequently used to indicate levels of concentration and diversity (Iannaccone, 1991). We calculated the squared proportion of immigrants of each religious denomination in a group, and then summed the resulting numbers. Because religion is coded in 58 categories at the individual level the index ranges from 0, or perfect concentration, to 0.98, indicating maximum diversity.

Education: We use information on the highest education obtained. It is measured at an ordinal level, with three main categories: primary education, secondary education, and tertiary education. Because information on education was missing for a significant percentage of the respondents (19.9%), we constructed an additional category for those with missing information. On the basis of these four categories, we included three dummy variables in the analysis for education.

Educational composition: Using the information on education at the individual level, we constructed a variable that measures, for all immigrants, the percentage of the

ethnic group that have the same education as their own. Because education is categorized into three categories (primary, secondary, and tertiary), immigrants within the same ethnic group, but with different educational qualifications, naturally differ in their scores. We classified immigrants with missing information on education as having obtained at most primary education. This decision seems justified, considering the fact that there was no option in the Dutch Census for having ‘no education,’ (making it plausible to use the missing category instead) and that income levels of people with no information on education are similar to those with primary education and significantly below people with secondary and tertiary education (results not presented here). Furthermore, in the analysis we present on the role of education at the individual level, it appears that immigrants with missing data on education strongly resemble the primary educated immigrants, but not the higher educated (results shown below).

Religion: Respondents were asked if they are affiliated to a religion, and if so, which one. We constructed three dummy variables (i.e., Christian religion, irreligious, non-Christian religion).

Linguistic proximity: It is important to measure language skills before marriage, not at the time of the survey. As a proxy, we rely on the language situation in the country of origin. We assume that immigrants who originate from countries in which the Dutch language was official (e.g., Belgium, Surinam, Dutch Antilles) speak the host language better at the time of migration than immigrants from countries in which Dutch was not official. With respect to immigrants from countries in which Dutch was not the official language, those from countries in which the official language is linguistically close to the Dutch language are assumed to have better Dutch language skills than immigrants for whom the mother tongue is distant to Dutch. We make this distinction by contrasting immigrants raised with a Germanic language (e.g., born in Germany, Britain, Norway) to immigrants who learned another language (e.g., born in Italy, Tunisia, Morocco). Information on the language situation in different countries was obtained from Grimes (2000). Previous research has found a clear association between country of origin differences in language exposure and language distance and actual language skills (Van Tubergen and Kalmijn, 2005).

Racial composition: There is no individual-level information available in the Dutch census on self-identified race or skin color. We therefore classified immigrant sending countries into predominantly white vis-à-vis nonwhite.

Year of marriage: We include a variable indicating the year in which the marriage took place. This variable was measured per 10 years since 1920.

Gender: We include a dummy variable for “women.”

We also include two control variables.

Age at marriage: This variable is measured in years.

First marriage: We include a dummy variable, which contrasts first marriage with second or higher order marriages.

Table 1 presents descriptive statistics of the dependent and independent variables.

Table 1
Descriptive statistics of dependent and independent variables

	Entire population (<i>N</i> = 273,919)			Excluding married outside current place of living and excluding married more than five years ago (<i>N</i> = 17,985)		
	<i>M</i>	<i>SD</i>	Range	<i>M</i>	<i>SD</i>	Range
<i>Dependent variable</i>						
Endogamy	.34	.47	0–1	.24	.43	0–1
<i>Independent variables</i>						
<i>Contextual level</i>						
Relative size (log), country	–.45	1.44	–8.24–.79	–.47	1.44	–8.24–.79
Relative size (log), local	–.13	1.51	–8.28–2.74	–.10	1.43	–6.88–2.74
Sex ratio (log), country	–.09	.62	–3.48–3.87	–.13	.65	–3.48–3.87
Sex ratio (log), local	–.21	.90	–4.61–6.39	–.19	.80	–4.61–4.26
Segregation	31.02	9.57	23–87	32.51	10.81	23–80
Religious diversity	.63	.19	.07–.82	.62	.21	.07–.82
Educational composition	65.54	30.10	.17–99.47	68.81	27.47	.17–99.47
<i>Individual level</i>						
<i>Education</i>						
Primary	.57	.49	0–1	.63	.48	0–1
Secondary	.12	.33	0–1	.11	.31	0–1
Tertiary	.11	.31	0–1	.07	.25	0–1
Missing	.20	.40	0–1	.20	.40	0–1
<i>Religion</i>						
Christian	.74	.44	0–1	.71	.45	0–1
Irreligious	.22	.42	0–1	.25	.43	0–1
Non-Christian	.04	.20	0–1	.04	.19	0–1
<i>Language origin</i>						
Dutch	.51	.50	0–1	.59	.49	0–1
Germanic	.35	.48	0–1	.23	.42	0–1
Other	.15	.35	0–1	.18	.39	0–1
White	.55	.50	0–1	.45	.50	0–1
Year of marriage (10 yrs)	3.47	1.14	0–5.10	4.84	.15	4.60–5.10
Women	.55	.50	0–1	.40	.49	0–1
<i>Control variables</i>						
Age at marriage	26.46	6.25	14–65	27.72	8.41	15–65
First marriage	.91	.28	0–1	.87	.34	0–1

3.4. Methods

Two methodological issues are important to mention. First, we do not present standard errors, because we make use of information on the entire Dutch population, not a sample. Hence, although the data set has a hierarchical structure, we do not apply multilevel or hierarchical linear models to estimate correct standard errors.

Second, we make use of binomial logistic regression techniques and refrain from applying loglinear (or harmonic mean) models. Loglinear methods are preferable from a methodological perspective, because they correctly use marriages as the unit of analysis, rather than individuals, and thereby control for the marginal distributions (Kalmijn, 1998). However, when the main focus of a research is to test theories, as it is in our study, loglinear

methods are difficult to apply. The reason is that when multiple continuous variables are included, the crosstabulation becomes too large, which, in turn, results in many empty cells. In that case, logistic regression analysis is to be preferred (Kalmijn, 1998). Note that in our models we control for differences in the marginal distributions by incorporating macro-level variables on group size, sex ratio and residential segregation.

4. Results

4.1. Descriptive findings

Table 2 shows the number of respondents by country of origin, and the percentages that are married within their own group. Separate figures are presented for the entire sample, and for the group that is married within the current place of living (i.e., excluding those married abroad). Table 2 first of all shows that within the entire population the percentage married endogamously varies considerably between immigrant groups. For instance, of the 5883 immigrants from Eastern Germany in the Netherlands, only 2.8% were married with someone of the own group. By contrast, 83.6% of the Portuguese immigrants and 87.5% of the Turkish immigrants in the Netherlands were married inside their group. All in all, of the 273,919 immigrants in the Netherlands in 1971, 33.7% were married endogamously.

These figures, however, refer to the entire population. That is, they include immigrants who were married in their country of origin, or married in the Netherlands but outside their current place of living. Table 2 shows, for each group, the percentage that are married outside their current place of living. These figures are substantial. On average, 79% of the immigrants were not married in the current place of living. When these immigrants are excluded from the sample, it appears that endogamy rates are much lower. Considering the immigrants from Portugal and Turkey again, the percentages of endogamy for these groups decrease to 54.5 and 55.6, respectively.

4.2. Hypotheses testing

Table 3 presents the results of multivariate logistic regression models of endogamy on individual and contextual variables. To test our hypotheses, we look at Model 1. This model is presumably the best: it measures relative group size and the sex ratio at the local level; it pertains to the population that was recently married (i.e., within five years before the census) and it only includes immigrants who were married inside the current place of living. In the next section, we examine to what extent bias results from including immigrants not recently married (Model 2), from including those married outside the current place of living (Model 3), and from measuring group size and the sex ratio at the national level (Model 4).

The first group of hypotheses refers to contextual effects and our findings are generally in line with theoretical expectations and previous results. Model 1 shows that the larger the size of an immigrant group in a municipality, the higher the chance of endogamy among the members of that group. Also in line with expectations is that the more favorable the sex ratio in a municipality, the more likely immigrants are to marry endogamously. Furthermore—as hypothesized—segregation increases the likelihood of endogamy. Finally, religious diversity of an immigrant group promotes marriages outside the own ethnic

Table 2

Endogamy and number of respondents by country of origin in the Netherlands

Country of origin	Entire population		Excluding married outside current place of living		Married outside current place of living (%)
	<i>n</i>	Endogamy (%)	<i>n</i>	Endogamy (%)	
Europe					
Albania	9	0	4	0	56
Austria	3,521	5.2	911	1.5	74
Belgium	16,261	11.6	4,169	4.2	74
Bulgaria	107	28.0	17	11.8	84
Cyprus	16	12.5	0		100
Czechoslovakia	1,627	31.9	208	8.2	87
Denmark	716	8.4	73	0	90
Finland	317	7.6	19	10.5	94
France	3,492	13.0	687	2.3	80
Germany, West	65,210	10.6	20,952	7.4	68
Germany, East	5,883	2.8	1,396	.9	76
Greece	1,688	55.6	302	40.7	82
Hungary	2,639	28.2	772	9.5	71
Iceland	13	30.8	0		100
Ireland	395	7.6	27	7.4	93
Italy	5,874	30.1	1,406	19.6	76
Luxembourg	118	13.6	28	0	76
Malta	20	0	^a	^a	^a
Norway	655	23.2	76	14.5	88
Poland	4,437	9.4	1,084	10.1	76
Portugal	2,391	83.6	202	54.5	92
Rumania	328	10.7	51	9.8	84
Spain	7,794	80.3	1,170	57.8	85
Soviet-Union	1,951	4.7	284	2.1	85
Sweden	601	29.0	37	2.7	94
Switzerland	1,366	13.0	138	3.6	90
United Kingdom	7,675	26.9	802	5.0	90
Yugoslavia	1,619	39.4	270	20.7	83
North America					
Canada	490	15.1	81	2.5	83
United States	2,854	48.1	306	4.6	89
South America & Caribbean					
Dutch Antilles	3,939	20.8	910	13.7	77
Surinam	10,360	59.7	2,107	38.2	80
Asia					
China	885	48.8	130	27.7	85
Indonesia	108,117	46.3	19,366	26.1	82
Israel	184	20.7	22	13.6	88
Philippines	70	0	6	0	91
Turkey	5,918	87.5	455	55.6	92
Africa					
Algeria	113	5.3	12	0	89
Morocco	1,168	55.8	168	32.7	86
Tunesia	90	6.7	12	8.3	87
South Africa	523	13.8	66	1.5	87

(continued on next page)

Table 2 (continued)

Country of origin	Entire population		Excluding married outside current place of living		Married outside current place of living (%)
	<i>n</i>	Endogamy (%)	<i>n</i>	Endogamy (%)	
Oceania					
Australia	483	13.0	69	2.9	86
New Zealand	87	18.4	^a	^a	^a
Total	273,919	33.7	58,798	16.4	79

^a Figures suppressed for reasons of privacy policy Central Bureau of Statistics Netherlands.

community. Unexpectedly, however, Model 1 shows no support for the presumed positive effect of living among many co-ethnics with the same education as oneself. On the contrary, we find a slightly negative effect, meaning that the more immigrants in an ethnic group have the same education as their own, the less likely they are to marry within their own ethnic group. One methodological explanation for this unexpected result is the strong association between educational similarity and education. Those who belong to groups with the same education as their own tend to be immigrants with primary education ($r = .58$), and not immigrants with a secondary ($r = -.65$) or tertiary education ($r = -.62$). Because the immigrant groups in the Netherlands are uniformly low educated the results are tentative and possibly biased.

In order to assess the size of the contextual effects, we computed the effects of a one standard deviation change. It appears that the effect of segregation is substantial. A one standard deviation increase in the segregation of the group at the country level (i.e., $SD = 10.81$, Table 1; $B = .06$, Table 3) is associated with a ($e^{10.81 \times .06}$) 91 percent increase in the odds of ethnic endogamy. The role of the group-specific sex ratio and the relative size of the group are also quite substantial. A one standard deviation increase in the (logged) relative size of the group at the local level increases the odds of ethnic endogamy with 80 percent. For the sex ratio the odds change with 47 percent. The influence of educational similarity and religious diversity are weaker. A one standard deviation change for educational similarity reduces the odds of endogamy with 24 percent. When the religious diversity of an immigrant group increases with one standard deviation, the odds of endogamy decline with 20 percent.

Most of the hypotheses at the individual level are also confirmed. Model 1 shows that, as expected, immigrants who are not affiliated to a religion are the least likely to marry endogamously, whereas those affiliated to a non-Christian religion are the most likely to marry with members of their ethnic group. We also hypothesized and indeed find that the better immigrants in a group speak the Dutch language the lower the chance of endogamy of the members of that group. Immigrants who come from Dutch speaking countries are the most likely to marry exogamously, whereas those from non-Germanic countries are the least likely to marry outside their own group. Furthermore, our results show that white immigrants have a higher chance of exogamy than non-white immigrants. The results for education are also in line with expectations, although the effect of education is not perfectly linear. Model 1 shows that immigrants with primary education are more likely to marry co-ethnics than immigrants who received higher education. However, we find little difference between those who obtained secondary and tertiary education. In line with our expectations and previous studies, our study shows that women are more endogamously than men.

Table 3

Results from four logistic regressions predicting immigrants' endogamy: the Netherlands, 1971

	Model 1		Model 2		Model 3		Model 4	
Marriage market	Local		Local		Local		National	
Time of marriage	Recent		Recent and old		Recent and old		Recent and old	
Place of marriage	Inside current place of living		Inside current place of living		Inside and outside current place of living		Inside and outside current place of living	
Variables	<i>B</i>	<i>e^B</i>	<i>B</i>	<i>e^B</i>	<i>B</i>	<i>e^B</i>	<i>B</i>	<i>e^B</i>
<i>Contextual effects</i>								
Relative size, local (log)	.41	1.50	.54	1.72	.41	1.51		
Relative size, country (log)							.43	1.53
Sex ratio, local (log)	.48	1.62	.44	1.55	.56	1.75		
Sex ratio, country (log)							.45	1.56
Segregation	.06	1.06	.06	1.06	.08	1.08	.08	1.08
Religious diversity	−1.04	.36	−1.90	.15	−1.93	.15	−1.83	.16
Educational similarity	−.01	.99	−.01	.99	−.05	.95	−.04	.96
<i>Individual effects</i>								
<i>Education</i>								
Primary (ref.)		1.00		1.00		1.00		1.00
Secondary	−1.00	.37	−1.13	.32	−3.25	.04	−2.92	.05
Tertiary	−1.13	.32	−1.25	.29	−3.33	.04	−2.98	.05
Missing	.18	1.20	.07	1.08	.29	1.34	.32	1.38
<i>Religion</i>								
Christian (ref.)		1.00		1.00		1.00		1.00
Irreligious	−1.05	.35	−.91	.40	−.88	.41	−.88	.41
Non-Christian	.89	2.43	.87	2.39	1.23	3.43	1.18	3.24
<i>Language origin</i>								
Dutch (ref.)		1.00		1.00		1.00		1.00
Germanic	.74	2.10	1.59	4.92	1.58	4.84	1.30	3.67
Other	2.51	12.32	2.51	12.36	2.65	14.19	2.29	9.87
White	−2.42	.09	−2.72	.07	−2.84	.06	−2.56	.08
Year of marriage (10 yrs)	.80	2.20	.08	1.08	−.29	.75	−.30	.74
Women	.09	1.10	.09	1.10	−.12	.89	−.16	.85
<i>Individual controls</i>								
Age at marriage	.03	1.03	.02	1.02	−.02	.99	−.02	.99
First marriage	.27	1.31	.14	1.15	−.23	.79	−.23	.79
Constant	−5.93		−1.51		4.35		3.87	
<i>N</i>	17,985		58,798		273,919		273,919	

Note: e^B = exponentiated *B*.

The single exception to theoretical expectations is that we find that, over time, endogamy rates in the Netherlands are increasing (Model 1). It should be mentioned that the period under consideration is very small: because of the selection of the recently married population, the trend in endogamy is restricted to the period between 1966 and 1971. However, when those who were not recently married are included in the analysis—which is not problematic for examining the impact of year of marriage—we still find that over the period 1920–1971 there is a (small) increase of endogamy (Model 2).

To assess the strength of the effects at the individual level, we compare the extremes of the variables. Substantial differences in the Netherlands are associated with language, race and religion. Immigrants who originate from countries in which Dutch or another Germanic language is not official have 12.3 times higher odds of endogamy than immigrants from Dutch speaking nations. The odds to marry endogamously for non-white immigrants are (1/.09) 11.1 times as high as for white immigrants. The odds to marry endogamously for immigrants who are affiliated to a non-Christian religion are ($e^{1.05+.89}$) 7.0 times as high as for immigrants not affiliated to a religion. Education and gender, in particular, are less significant in the Dutch context. The odds of endogamy for immigrants with tertiary education are (1/.32) 3.1 times as low as for immigrants with primary education. Women have 1.1 times higher odds to marry endogamously than men.

4.3. *Alternative models*

In this section, we assess the possible bias that results from alternative models frequently used in previous research. We look whether the results of Model 1 change when we include immigrants not recently married (Model 2), when we include those married outside the current place of living (Model 3), and when we measure some contextual variables at the national level (Model 4). Because there are three dimensions, each having two specifications, there are eight possible combinations. Table 3 presents four of those models; the remaining models are presented in Appendix A.

To begin, what are the implications of including immigrants who were not recently married, i.e., more than five years ago? Comparing Models 1 and 2, it appears that all coefficients are similar in direction, and most of them are similar in magnitude as well. There are two exceptions. One variable, year of marriage, has already been discussed. The other is religious diversity. When focusing on the newlyweds only (Model 1, $N=17,985$), the influence of religious diversity is weaker compared to an analysis that includes older marriages ($N=58,798$). Presumably, the difference between these models indicates the diminishing importance of religion in the Netherlands (Te Grotenhuis and Scheepers, 2001). Remarkably, the results for the other contextual variables (i.e., relative size, sex ratio, segregation, educational similarity) are similar for Model 1 and 2. This is quite surprising, since those contextual characteristics have changed over time (e.g., some groups have become larger or more segregated). The overall conclusion, therefore, is that including older marriages does not bias the direction of the (individual and contextual) predictors, and only slightly affects the magnitude of some predictors.

Does an analysis of immigrants married inside their current place of living leads to different results than an analysis that includes immigrants married outside their current place of living? To examine this, we compare Model 2 ($N=58,798$) and Model 3 ($N=273,919$). Now we do find some significant changes. It appears that some effects are similar, some effects are stronger in size, and several effects even change in sign. The estimates for relative group size, sex ratio, segregation, religious diversity, language origin, and race are similar when analyzed with or without immigrants married outside the current place of living. The effects of three variables (educational similarity, education, religion) are more pronounced when immigrants married outside the current place of living are included.

Several effects change in sign and thereby have substantive implications for the confirmation of hypotheses. First of all, Model 3 shows a negative effect of year of marriage,

whereas Model 2 (and Model 1) report a positive effect. Thus, relying on data that include immigrants who were married outside the current place of living (which includes immigrants married before they migrated to the Netherlands), one could wrongly infer that endogamy rates have decreased in the Netherlands, between 1920 and 1971. The conclusions based on Model 3 are possibly biased because of decreasing numbers of immigrants that are married when they migrate to the Netherlands.

Another substantive change is related to gender. Model 2 shows that women are more likely to marry a co-ethnic partner, whereas Model 3 reports that women are less likely to do so. One possible reason for this difference has (again) to do with the selectivity of migration. It could be that in the Netherlands, in the period 1920–1971, women migrated more often as singles than men, who were more often already married endogamously at the time they arrived in the Netherlands. Thus, whereas our finding of the smaller sample that excludes those married outside the current place of living is in line with theoretical expectations, analysis including married immigrants outside their current place of living is not.

Although not of substantive importance, the results also show that the two control variables change in sign: age at marriage and marriage order. Model 2 shows that immigrants married at a higher age are more often endogamous than those who married at a younger age. In addition, it reports that those who were married for the first time are more often endogamous. By contrast, Model 3 shows that immigrants married at a higher age and those who were married for the first time are less often endogamous.

Does an analysis of local marriage markets lead to different conclusions compared to an analysis of the national marriage market? To answer this question, we compare the results from Model 3 with the findings of Model 4. In Model 4, we run the same regression as in Model 3, with two exceptions: the relative group size and the sex ratio are not measured at the local level but at the national level. Comparing these models shows that the effects of these and other variables are similar in direction and in magnitude. The log odds ratio of relative group size is .41 in Model 3 and .43 in Model 4. There is a slightly stronger effect of the sex ratio at the local level ($B = .56$) than at the national level ($B = .45$). Comparing Model 3 and Model 4 furthermore shows that the magnitude of other contextual variables (that are measured in the same way in both models) are virtually the same. The effects of the individual-level variables are similar in direction and magnitude for both models. In summary, analysis of local and national marriage markets leads to strikingly similar conclusions.

5. Conclusions and discussion

The main goals of this paper are threefold. First, it tries to examine whether findings observed in earlier studies are replicated in the Dutch context. Second, it attempts to extend earlier theoretical work by integrating individual and contextual approaches and by formulating new hypotheses on both levels. Third, it examines the severity of some methodological problems of earlier studies on ethnic intermarriage of the foreign-born population.

To start with the first issue: are findings observed in this study on ethnic intermarriage in the Netherlands in line with findings documented before? This question can be answered affirmatively. All in all, this study underscores the more general idea that ethnic intermarriage in the Netherlands, as in other societies, is an outcome of individual preference, structural opportunities, and third parties (Kalmijn, 1998; Lieberman and Waters, 1988). Using

these notions we derived a number of hypotheses on the individual and contextual level that have been confirmed in earlier studies (Anderson and Seanz, 1994; Gurak and Fitzpatrick, 1982; Hwang et al., 1994, 1997; Klein, 2001; Kulzycki and Lobo, 2002; Lieberman and Waters, 1988; Lievens, 1998; Stevens and Swicegood, 1987; Stier and Shavit, 1994; Tzeng, 2000). We find that immigrants' chances to marry co-ethnics are higher in immigrant groups that are numerically large, have a more favorable sex ratio, and are more segregated spatially. At the individual level, we find that immigrants who do not speak the host language well, who have lower-educational qualifications, and who are nonwhite are more likely to marry co-ethnics. The single exception, however, is that we do not find evidence for modernization; ethnic endogamy has increased, not decreased, in the period between 1920 and 1971 in the Netherlands.

We also tried to extend previous theories on intermarriage. We show that chances for endogamy clearly depend on both immigrants' individual and contextual characteristics. Hence, studies that focus on one of the two dimensions provide a one sided view on ethnic intermarriage. In addition, this study formulated new hypotheses that fit into this multi-level perspective. In line with theoretical expectations we find that the religious diversity in an immigrant group promotes outmarriage. People prefer to marry someone with the same religious affiliation, and in religiously heterogeneous groups, there are fewer opportunities for meeting religiously similar others. Also, in these heterogeneous groups, the religious community exerts less control on the marital behavior of their members. Furthermore, the importance of religion was emphasized by considering immigrants' own religion. As expected, immigrants affiliated to a religion have higher chances to marry co-ethnics, and this is especially true for immigrants having a non-Christian religion. Their religion deviates from society's mainstream, leading to fewer opportunities to meet natives that have a similar religion. In summary, our study finds that religion plays an important role in ethnic endogamy both on the individual and contextual level.

Our study also deals with several methodological issues. Comparing results from analyses with and without immigrants married more than five years age, we find virtually identical results. The same conclusions are also drawn when contextual variables (i.e., relative group size and sex ratio) are measured at the local or national level. However, we do find important differences when we either include or exclude immigrants married outside the current place of living. Including immigrants who are married outside their current place of living leads to overestimating the magnitude of the impact of educational similarity, education, and religion, and to opposite conclusions regarding the effects of year of marriage, gender, and two control variables (i.e., age at marriage and marriage order). The overall assessment is that our hypotheses on the individual and contextual level are equally supported when we include immigrants who are not recently married (instead of focusing on recently married only) and when we study the national marriage market (instead of the local marriage market). Some significant changes occur when we include immigrants married outside the current place of living (instead of restricting to those married in the current place of living). Further research is encouraged to examine whether our methodological conclusions can be generalized to other countries than the Netherlands.

Equally valuable would be to study more contemporary patterns of ethnic intermarriage in the Netherlands. In view of several trends, one would expect to find increasing ethnic endogamy. Like many other West-European countries, migration flows to the Netherlands have increased dramatically and changed in character since the 1960s

(Statistics Netherlands, 2006). A substantial part of the contemporary immigrant population are lower educated and non-Christian (e.g., so-called ‘guestworkers’ from Turkey and Morocco), who are different from the higher educated, secular-Christian native majority. In addition, there are more opportunities nowadays for finding a co-ethnic spouse both within and outside the own region of residence. The number of co-ethnics has increased, the sex ratio has become more balanced, and the means for communication have become easier. Many immigrants in the Netherlands (and other European countries) have strong connections to their country of origin (because of lower migration costs and easier communication), leading to increasing numbers of “transnational marriages” (González-Ferrer, 2006; Hooghiemstra, 2003). It remains an empirical question whether recent policy measures discouraging transnational marriages and promoting immigrant integration override these forces.

Appendix A

Results from Four Logistic Regressions Predicting Immigrants’ Endogamy: The Netherlands, 1971

	Model 5		Model 6		Model 7		Model 8	
	National		National		Local		National	
	Recent		Recent and old		Recent		Recent	
	Inside current place of living		Inside current place of living		Inside and outside current place of living		Inside and outside current place of living	
Variables	<i>B</i>	<i>e^B</i>	<i>B</i>	<i>e^B</i>	<i>B</i>	<i>e^B</i>	<i>B</i>	<i>e^B</i>
<i>Contextual effects</i>								
Relative size, local (log)					.34	1.40		
Relative size, country (log)	.38	1.46	.52	1.67			.26	1.29
Sex ratio, local (log)					.55	1.73		
Sex ratio, country (log)	.44	1.56	.40	1.49			.45	1.57
Segregation	.06	1.06	.07	1.07	.07	1.07	.07	1.07
Religious diversity	−1.14	.32	−1.84	.16	−.79	.46	−.89	.41
Educational similarity	−.01	.99	−.01	.99	−.02	.98	−.01	.99
<i>Individual effects</i>								
Education								
Primary (ref.)		1.00		1.00		1.00		1.00
Secondary	−.77	.46	−.71	.49	−1.63	.20	−1.06	.35
Tertiary	−.90	.41	−.81	.45	−1.36	.27	−.79	.46
Missing	.20	1.22	.07	1.08	.48	1.62	.52	1.68
Religion								
Christian (ref.)		1.00		1.00		1.00		1.00
Irreligious	−1.04	.36	−.90	.41	−.87	.42	−.88	.42
Non-Christian	.83	2.30	.81	2.25	1.11	3.05	1.05	2.84
Language origin								
Dutch (ref.)		1.00		1.00		1.00		1.00
Germanic	.55	1.73	1.30	3.69	.62	1.85	.36	1.43
Other	2.15	8.61	2.06	7.85	1.48	4.38	1.06	2.90
White	−2.32	.10	−2.49	.08	−1.28	.28	−1.22	.30
Year of marriage (10 yrs)	.74	2.09	.05	1.05	−.43	.65	−.43	.65
Women	.08	1.08	.07	1.07	.18	1.20	.17	1.19

(continued on next page)

Appendix A (continued)

	Model 5		Model 6		Model 7		Model 8	
Marriage market	National		National		Local		National	
Time of marriage	Recent		Recent and old		Recent		Recent	
Place of marriage	Inside current place of living		Inside current place of living		Inside and outside current place of living		Inside and outside current place of living	
Variables	<i>B</i>	<i>e^B</i>	<i>B</i>	<i>e^B</i>	<i>B</i>	<i>e^B</i>	<i>B</i>	<i>e^B</i>
<i>Individual controls</i>								
Age at marriage	.03	1.03	.02	1.02	.01	1.01	.01	1.01
First marriage	.27	1.31	.15	1.16	.16	1.17	.16	1.18
Constant	−5.94		−1.99		.73		.36	
<i>N</i>	17,985		58,798		60,059		60,059	

Note: e^B = exponentiated *B*.

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